

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/003155

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.<sup>7</sup> C23C16/18, H01L21/285

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int. Cl.<sup>7</sup> C23C16/00-16/56, H01L21/285

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2005

Kokai Jitsuyo Shinan Koho 1971-2005 Toroku Jitsuyo Shinan Koho 1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

JSTPlus (JOIS), Science Citation Index Expanded (Web of Science)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	JP 63-5424 B2 (Ruhchemie AG.), 03 February, 1988 (03.02.88), Claims & EP 27625 A & DE 2941896 A & CA 1162798 A	1 2-7
A	Per MARTENSSON et al., Growth and Selectivity in the Cu(III)-2,2,6,6,-tetramethyl-3,5 -heptanedionate/H <sub>2</sub> Process, J. Electrochem. Soc., 1998, Vol. 145, No. 8, pages 2926 to 2931	1-16
A	Mikko UTRAIINEN et al., Studies of metallic thin film growth in an atomic layer epitaxy reactor using M(acac) <sub>2</sub> (M=Ni, Cu, Pt) precursors, Applied Surface Science, 2000, Vol. 157, pages 151 to 158	1-16

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

24 May, 2005 (24.05.05)

Date of mailing of the international search report

07 June, 2005 (07.06.05)

Name and mailing address of the ISA/

Japan Patent Office

Authorized officer

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Telephone No.

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PCT/JP2005/003155

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2003-193233 A (Tokyo Electron Ltd.), 09 July, 2003 (09.07.03), Claims & WO 2003/016588 A1 & TW 569323 A & KR 2004030965 A	8-14

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## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

The technical feature of claims 1-7 and 15 is in that a copper carboxylate complex or a derivative thereof is used as the raw material, while the technical feature of claims 8-14 and 16 is in that introduction of a reducing gas is controlled. Since there is no technical relationship between these inventions involving one or more of the same or corresponding special technical features, these inventions are not considered so linked as to form a single general inventive concept.

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims: it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

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